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THE REFORMED
ROMAN OR ORIENTAL BATHS,

REVIEWED AS

THERMO-ELECTRICAL TEMPLES
OF HEALTH.

WITH

MEDICAL REMARKS

ON THE

NATURE AND SCIENTIFIC TREATMENT OF CATTLE
DISTEMPERS BY THE HOT AIR BATH.

BY

JAMES TUCKER, M.D., M.R.C.S.E.,

SLIGO,

AUTHOR OF "OBSERVATIONS ON CHOLERA AND FEVER."

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TO
HIS EXCELLENCY THE EARL OF CARLISLE, K.G.,
Lord Lieutenant and General Governor of Ireland.

MY LORD,

The permission, so graciously conceded, to dedicate to your Excellency this publication, on the physical, social, and sanitary improvement of the people, I esteem as a circumstance well calculated to arouse the public mind to a more general and serious consideration of the vital questions therein treated.

Whatever be the intrinsic merits of a work, auspicious patronage confers upon it peculiar lustre; for some truths are slow to be received, unless under such influence, ~~which stamps them with currency and character.~~

In your Excellency seems happily combined, all the graces of social refinement, of an accomplished mind, and of moral worth: to whom, then, could a work, modest in its pretensions, though great in its objects—namely, to elevate mankind physically, socially, and morally—be more appropriately dedicated than to the illustrious Viceroy of Ireland, who is the special patron and promoter of “utility and progress,” of literature, of science, and of the arts.

Fortified in the belief that the truths which I have ventured to unfold, will bear the test of time and of public criticism, I rejoice that they can now circulate under such benign influence, and thus produce "*fruit*" in quicker time, and in greater abundance.

With the most profound respect,

I have the honour to remain,

Your Excellency's

Most obedient, humble Servant,

JAMES TUCKER, M.D., M.R.C.S.E.

SLIGO, *May*, 1860.

P R E F A C E .

"Salus Populi suprema lex."

IT is a truth, which has earned the often profitless though always unimpeachable character of a truism, that prevention is better than cure. The maxim is so familiar that, though profound and practical, it is received rather as an abstract proposition, than the embodiment of the experience of the wise. Yet, every day we live we are taught by a painful experience that it is better to adapt ourselves to the established order of Nature, than to violate her laws, and afterwards endeavour to escape her penalties by compromise. In no department of our social ethics is this more clearly exemplified than in that which regards our health—a blessing everywhere recognized as the condition of all earthly enjoyment. The human frame is admirably adapted, by the laws of its being, for the realization of happiness, but it is to multitudes, each day, the inevitable source of pain and discontent. That the evils incident to human life may and can be avoided, by compliance with the conditions which the eternal author of nature has imposed, is so evident that it needs no demonstration, and the object of the following Lecture is to show, as clear as possible, the character of those conditions, and the means whereby they may be fulfilled, in a most important and fundamental respect.

This respect is cleanliness!—Not merely cleanliness of the exterior—the washing of the surface of the frame—but cleanliness thorough and complete, penetrating through the pores and tubes even to the inner tissues, and minutest life-cells. In this manner "cleanliness is next to godliness,"*

* St. Bernard.

in its pervading influence, the necessity for its application to the innermost recesses, and most recondite labyrinths of the human being. Godliness is the spiritual antitype, cleanliness the appropriate type. The one has the promise of the life that now is, and of that which is to come; the other secures present health, strength, and vital pleasure, and fortifies the constitution for the bivouac of life. Cleanliness is not only the type, but an essential adjunct of spiritual purity and progress, and thus we find with beautiful propriety, the immoral always represented as the unclean, and those only who have clean hands and pure hearts as fit to ascend to the sublimity of heaven.

The wisdom of the ancients did not fail to apprehend the mutual reciprocity between the mind and the body. The words of an ancient author have become a homely proverb, *mens sana in corpore sano*: implying, that "Nature is the echo of the mind." Christian saints and Pagan philosophers frequented the ancient Roman baths, and *baths were also* recommended by Hippocrates and Celsus.

The mind revolts from the contemplation of uncleanliness: Dirt and poverty, dirt and disease,* dirt and intemperance, dirt and brutal instincts, are inseparably associated. Dirt is the natural antithesis to dignity, and yet it is the condition, and, alas, too often the distinguishing characteristic of the masses of mankind. Buried in filthy dwellings, breathing impure air, without a single sight or sound to relieve the deadness of this brutalized state, the body becomes clogged with impurities, and the mind languid, depressed, and uneasy. The man feels he is not in that tone which alone can ensure the joys of contentment: he experiences a hollowness of heart, a dulness and dearth within, which drive him instinc-

* Fever and Filth—cause and effect.

tively to seek, in the use of tobacco and whiskey, a relief from care and sorrow. But such relief he enjoys at the expense of family, faculties, and reputation; he is stifling effects, not removing causes; he has disobeyed nature, and her laws are inexorable.*

But are the wretched inhabitants of our lanes and by-streets the only sufferers from habits of uncleanness? A moment's reflection unfolds to our view a legacy of evil which the ignorance and apathy of former generations bequeathed us. If typhus, cholera, scarlatina, small-pox, and a multitude of other epidemics are hatched in the hovels of the poor, they find but too congenial habitations within the palaces of the rich.

*"Pallida mors æquo pulsat pede pauperum tabernas
Regumque tures."*

The reason is, that the habit of cleanliness—which is the only safeguard against those frightful evils—has been regarded in too limited a light—not as an all-permeating principle, but

* The Medical Officer of a district has the best opportunity to illustrate this sad state of existence. Some short time since I noticed the homely hovel of a small farmer (the tenant of a nobleman), which may be taken as the prototype of many in country districts. It was about 12 feet wide and 24 feet long. The domestic circle—happy family—or menagerie that dwelt therein, consisted of a sick man, his wife, four daughters, one son, three cows, one horse, two calves, two pigs, and poultry, all in one common, undivided house—no partition. Generally the pigs dwell beneath the beds, the people in them, and the poultry over head. They can enjoy the prospect of bacon and chickens, which they seldom taste! An aboriginal from Maherow, named Heraghy, observed to me, in defence of this sad social state, that, "it was better have that house full than empty." I was confounded at his political economy, and could only conclude that it would take some generations to refine his class into ladies and gentlemen. There is, however, a bright side in Irish life—which is evidence of personal purification of flesh and blood:—in some backward districts the people frequent a rude imperfect form of the old Roman baths—especially the females in Rathlin—before the fair, to improve their complexions.

as a mere outward washing of the skin. The heart, kidneys, lungs, muscles, brain, the entire system, requires cleansing. They require that all poisonous agglomerations should be removed, and all peccant humours set free. But how is this to be effected? The answer is contained in the following Lecture. Suffice it here to say, that it is not by dealing with the organism when prostrated by abuse, but by the rational culture of the constitution in a state of health. It is not by the use of drugs, or the aid of skilled physicians, that Nature designed mankind to be kept in daily vigour, but by constant attendance to those rules of life which promote health rather than cure disease. Next to the seasonable use of food comes the application of a thorough personal purification, in promoting health and aiding nature in her vital functions. It is a duty which we owe ourselves, and for which we are responsible to our Maker, and the performance of which will bring abiding recompense. And, let it not be thought a matter of mere convenience, or of secondary importance. The great object of the philosophy of Lord Bacon was to multiply human enjoyment, and to mitigate human sufferings. "*Efficaciter operari ad sublevanda vitæ humanæ incommoda.*" Whatever means could, in any degree, promote this end, was viewed by Bacon as deserving the attention of all mankind, and hence it has been said by the late Lord Macaulay, that on his pedestal, and not on that of Epicurus, should those noble lines be inscribed—

"O tenebris tantis tam clarum extollere lumen
Qui primus potuisti illustrans commoda vitæ."

The object of this Lecture is to endeavour, in accordance with the spirit of that philosophy, to throw some light on a means of utility and pleasure, as yet but little appreciated or understood in this country, but upon the general adoption of which depends an incalculable amount of national happiness.

LECTURE ON THE ROMAN BATH.

IF I can demonstrate to you the influence of vital electricity as the most important agent in the performance of the vital functions of animal life, and show that the hot air Roman baths are better calculated to regenerate and retain animal electricity within and upon the human frame, than either vapour or water baths, I shall have accomplished the task that is now before me. An important question of public health is involved—one which vitally concerns personal reform, social reform, and sanitary economy. To show the connection that exists between these three, I shall proceed to review each according to the order prescribed. The science of animal life seems to be the most important subject that could occupy the human mind. When we consider the uncertainty of life, the certainty of death, the pleasure of existence, and the dread of dissolution; when we consider the operations of this unfathomed and unfathomable principle, Life: of whose influence we are conscious, but of whose essence and seat we are ignorant; the use of which we are blessed with, but the knowledge of which is denied us: the term of which is fixed, but unknown, but which, through its Almighty Author, animates all regions—earth, air, and water—we shall perceive much to admire, to excite our wonder, to fill us with gratitude for what we are, called from nothing to enjoy life, but with humility when we contemplate the prime moving principle of all, and know that He is beyond all human comprehension. Although it has pleased the Creator to keep the creature in ignorance of the essence of that vital principle through which man moves, lives, and has his being—of the mysterious union of the immortal spirit with the mortal body—He has permitted us to know some of the phenomena of life, and endowed us with mental faculties and senses to observe its manifestations. Animal life is a series of actions and of re-actions, of creations and of re-creations,

of self-poisoning and of depoisoning processes; of waste and of supply, of nutrition and combustion, of ventilation and of calorification. The external influences that promote all these vital changes are Light, Heat, and Electricity. Life requires to be supported by food, as fire requires fuel. Fire is constantly consuming fuel; life is continually consuming the old materials of the body by electro-chemical combustion. There are five signs of life, vital evidences peculiar to living beings. The first four are positive proofs; the fifth, which is death, is a negative proof of vitality, for there cannot be death unless where there was life. On this occasion we shall only refer to the first evidence of life, for it bears specially upon the present question. It is that vital power of resistance to the influence of those physical agents termed heat, air, and moisture, which all living beings of both the animal and the vegetable kingdom possess. It was accidentally discovered in France, in 1760, exactly one hundred years ago, by two French philosophers, who wished to ascertain the temperature of an oven for some special purpose. The female attendant entered it; remained ten minutes there, and marked the thermometer, when it stood at 288° or 76° above the boiling point of water. The only effect the high heat had upon her was to heighten her complexion, but her respiration was not rendered quick nor laborious. This important fact astonished several philosophers. Dr. Blagden, of Edinburgh, repeated the experiment shortly after. On first entering, the heated air was very disagreeable, but all uneasiness was removed on the appearance of copious perspiration; though he could bear with impunity hot air at a temperature of 260° , he could not put his finger into water boiling in the same chamber at a temperature of 212° , nor into mercury heated to 120° , nor spirit of wine to 130° . But the most important point ascertained is, that while the living body bore the high temperature of 260° , its own special temperature was only increased from 98° to 102° . Fishes are thrown up alive from boiling volcanoes; flowers and water plants are observed to flourish and grow in boiling springs at a temperature of 212° , but all preserve their own peculiar vital temperature;

no matter whether they live in either a boiling or frozen temperature, they resist that law of caloric which diffuses heat so as to establish an equilibrium of temperature, nor will they in frozen regions part with their vital heat to increase that of the surrounding temperature. Living beings will neither give nor receive more or less caloric than they require.

Chabbert, a French itinerant experimenter, commonly called the "fire king," withstood the high temperature of a chamber of from 400° to 600° , while beef was being roasted and eggs boiled, owing to his strong vital powers. The workmen in Magnus's patent slate enamelling establishment in London, are reported to bear a temperature of from 200° to 300° for six hours daily, not only without inconvenience but with benefit to their health. The bath attendants in Constantinople enjoy a long life up to ninety years, in robust health and strength; the large number of old people in Turkey belonging to the working classes is generally remarked. It is estimated that four Turkish porters will carry the load of six English, but all, rich and poor alike, take the bath and are remarkably temperate. In fact, temperance and baths are religious obligations with the Turks—so much so, that the criminal condemned to death is as much entitled to his weekly bath as he is to his daily food. In Cyprus, where the population are partly Christians, and partly Mahometans, the latter take the bath as a religious rite, and are singularly exempt from pulmonary consumption; while the former, who neglect this physical virtue of personal purification, are as subject to this fearful disease as other European nations. The physical decay of mankind in this great United Kingdom is a question of grave consideration among medical philosophers just now. I believe it is ascertained that in large cities in England half the population are cut off before the age of five years, while only one in every thousand reaches the age of seventy years, although the general practitioners' revenue in England is estimated at five millions annually, while the revenue to the exchequer on patent quack medicines amounts to one hundred thousand pounds a year. If we compare these most important facts with the personal condition of

the Barbarians—the Turks—we have some cause for humiliation. In Constantinople there are less medical institutions for its population than any other European city—but there are more baths. In London the medical practice in drugs is very flourishing. There is a very fast trade conducted up and down that grand canal of traffic to general medical practitioners, the intestinal tube. I had an opportunity of observing this personally in 1840, when I was the assistant surgeon to a medical practitioner in London; we never visited and prescribed for less than from 80 to 100 patients a day—private practice, too. I have known one lady to consume the contents of 30 dozen bottles of physic in two months. She, surely, was a fortune in herself to her medical friend; but come, popular writers review us very severely, and, I must confess, not without good grounds, in London. A sketch of a medical practitioner totting up his daily proceeds, I shall quote for your amusement. “Pretty good morning’s work—yes, certainly. Twenty patients at 5 draughts a day—5 times 20, is 100—£5—very good. They will take them for a week—7 times 5 is £35—capital! Confound these people in St. James’s-street, they will take pills—let me see, 2 at night, 1 in the morning—’twill be a week before they take two boxes—we can’t send more—and that will be only 2s.; that won’t pay! We will leave out the aromatic, and they must take the draughts” (great laughter). Now, why is all this sad state of things in such a flourishing condition? Simply, because there are two important elements to be consulted in the treatment of diseases—namely, Nature and Art, and the great majority rely entirely upon the latter, and seem to forget the former. The great mass of our population are dragged up into existence and drugged out of it.

After this brief review of the medical art, we may now consider the medical science of Nature. The high office of the physician is to ask Nature questions, to interpret her answers correctly, to be the minister and not the master of Nature, to administer medicines to assist and not to resist her efforts. For Hippocrates truly said: “Nature is the physician of all diseases.” An American medical writer said: “Medicine is the art of amusing the patient, but

Nature cures the disease." Sir John Forbes, Physician to the Royal Household, in his work on Nature and Art, stated that Nature possessed greater power than Art in the cure of disease, far beyond the ordinary belief of the public or of the junior members of the medical profession. The first Napoleon said, "Doctor, no physicing; we are made to live. Do not counteract the living principle. Leave it the liberty to defend itself, it will do better than your drugs." Sir Philip Crampton's advice to a mother was—"Don't drug your child even for your most friendly apothecary." Dr. John Armstrong, of London, in his Practice of Physic, stated that it would be well if the young medical practitioners would spend the first year of their practice in drugging themselves; they would then save many of their patients in after life from an untimely end. We should study that book of books, Nature, for all other books are second-hand to her; become her faithful allies, her bottle-holders in the contest between life and death. Dr. Armstrong said, there are a class of learned physicians "who are deep read in books, but shallow in themselves and in the book of Nature." Such men are apt to drive a fast trade in drugs, about which they know little: upon constitutions about which they probably know less. The Professor of Medicine at the Oxford University declared, "that to separate the study of Physiology, *i.e.*, the science of Nature from that of Medicine, was to reduce the latter to a mere empiricism." To degrade it from the high position of a sublime science to a very low art indeed. To illustrate:—A young doctor employed to treat cholera in Paris boasted, "I first cured the premonitory symptoms, then they got fever: I cured them of the fever, but still they died, and no thanks to me." This man relied entirely upon Art; he had no knowledge of Nature; he seemed not to know that the symptoms he checked were Nature's efforts to relieve herself; he, as it were, locked up the poison which engendered the fever—which performed the last act in the tragedy, while he performed the first. I may have departed a little from my programme in the foregoing observations, but it is necessary, for all our thoughts and ideas should be in harmony with the laws

of Life and of Nature. Life is a state of change, a slow combustion, a consuming flame supported by oxygen—for though this vital element be essential to life, it is also destructive of it: precisely as it is essential to light, but it consumes the lamp oil. Caloric seems a most essential element of animal life, it warms the living body and stimulates all the vital functions. The blood, “the life of the flesh,” the internal atmosphere of animal life, though not an organ, is one in the act of formation; or, rather, the sum of all the organs that are being formed: supplies the pabulum for every part of the body, contains the elements of life and death, of health and disease, and is composed of millions of vital cells, molecular lives, red globules, that live, grow, reproduce others, and then die naturally, or are killed by poisons that are permitted to accumulate in the blood through neglect of personal purification of the skin, and which engender disorders or diseases of some one or more vital organ, as of heart, liver, or lungs—gout, rheumatism, or scrofula.

The importance of the blood may be estimated from the millions of living individuals, called vital cells, that live and move within it, whose vital functions consist in the formation of organic matter, the vitalization of structure, the transmutation of form, and the propagation of their own species from parent cells. They are the bricks that build up the living fabric. When this cell-life ends, nutrition stops. Life is exchanged for death; the organized living structure then crumbles into dust, as it was. There are two vital functions in action within us, a self-poisoning and a depoisoning process. The first generates animal heat, consumes the old materials of the body, and elaborates carbonic acid poison, through the influence of electricity; the second removes these poisonous principles through the lungs and skin; &c., by means of the same vital agent. The millions of molecular vital blood cells are organized upon central sparks of electro-magnetic iron, which attract oxygen by their magnetic influence from the atmosphere, through the lungs into the blood, through which they become vitalized, and carry this vital element all over the body, where, in the capillary circulation under the influence of electricity, the oxygen dissolves

partnership with the red globule, and enters into electro-chemical union with the old materials of the body; first consuming them, and then dissolving them, when they are easily removed from the blood in the form of invisible vapour, or water, by respiration and perspiration through the skin and lungs. How fearfully and wonderfully made are we, for “in the midst of life we are in death.” Self-poisoned, “we die daily.” The matter changes, but the man remains; the same, yet different; no longer the same matter, but still the same man. The bony buildings of our living tenements are all removed and replaced in time—such is the wear and tear of human life. “Singular to be once another and the same.”—Sir Walter Scott. With this brief review of the laws of life, we may proceed to consider the connection between animal life and vital electricity. Electricity—that physical soul of matter, and vital agent of Nature, which extends beyond the confines of our atmosphere into infinite space, keeps the whole planetary system in normal equilibrium, shakes the clouds in thunder, and under favorable circumstances, will burn eoke under water, and oils, with a brilliancy that could only be surpassed by the sun, and sufficiently luminous to strike off our second-selves photographically—performs within the little world of man, in all the parts, the drama of animal life, assuming simultaneously each and every character, and acting to perfection in all the vital functions, upon the stage of human life, and ending in the tragedy of death. The human machine may, therefore, be fairly regarded as an electro-magnetic, and a magneto-electric machine. For, all the vital functions are electro-chemical in their nature and effects. The lungs and skin are electro-positive, the liver and bowels are electro-negative. The muscular system is an electro-genic apparatus. The internuncial function of the nervous system is a magneto-telegraphic motive power; for, what is physically felt in the extremities is psychophysically acknowledged at the central seat of consciousness—the sensorium. Faraday has rendered it probable that there is a greater amount of electricity required to decompose nine grains of water under digestion, than is liberated in a thunder storm—and

that if a human being could be balanced upon the point of a magnetic needle, he would point equatorially, and not from pole to pole. Muscular action of the arms can excite animal electricity, which will re-kindle the flame of animal heat, so as to warm the hands when cold. To prove that animal electricity is generated by muscular action, we have only to hold two wires, one in each hand, under water, connected with a galvanometer at their opposite ends, then work the muscles of one arm, when the magnetic needle will deviate from the pole to one side, and reverse its course if we work the muscles of the other arm and relax those of the first worked. Electricity can be made to operate as a purgative, to expel blood from a bleeding arm, or beer from a barrel; and, upon the same principle, to expel perspiration through the pores of the skin. We sleep and perspire in feathers and blankets, which are non-conductors of electricity, in order to be refreshed by the regeneration of a new supply of it, which our beds are well calculated to retain upon us. By means of the artificial electro-chemical bath, mercury, arsenic, and other poisonous metals are removed from the human frame, and deposited upon the surface of the bath; but I would prefer leaving it to Nature to do her own work, and aid her with the internal natural thermo-electrical hot-air Roman Bath.

Matteucci, an Italian philosopher, compares the muscular system to a galvanic machine, and attempts to show that the current from the interior to the exterior of a muscle, is as follows:—Oxidable zinc represents the true fibre of the muscle. The acid, or the saline exciting fluid, the arterial blood. The copper, or the platinum conducting plate, the surface of the muscle. Baron Liebig says that there are myriads of electrical currents in every mass of muscle. Electricity, then, may be regarded as second life, the vital agent of animal life. In collapsed cholera the patient, in many cases, is colder in last life than even in death, because he is *minus* his electricity, and the electro-excitant salts to regenerate it. The mechanical function of pulmonary respiration goes on in this state, cooling the body, while the electro-chemical function, which should take place to regenerate animal electricity and animal heat all over the body, is all but

suspended. There is no electricity, then, to keep up the electromagnetic condition of the iron of the red globules of the blood; they, therefore, cannot attract the oxygen from the lungs—they are killed for want of it to vitalize them. Molecular death, then, supersedes cell vitality. Sir James Murray has beautifully reviewed this important subject in these words—"No system can be more beautifully contrived to distribute electricity than respiration and circulation; black iron in the blood, under magnetic influence; circulating fluids revolving and controlling polar arrangements; pulmonary evaporations generating electricity from a surface thirty times the extent of man's exterior; steam electricity at every expiration; water passing off in vapour, and vapour condensing into water—all and every one of these being the best known generators of electricity—all of them contributing, in health, enough of that vital fluid or its elements to maintain due equilibrium, and to revive the animal functions." Caloric light and lightning-electricity are the three great elements of Nature—caloric and electricity fortify the constitutions of animals as well as vegetables. Caloric, light, and electricity will force the growth of hot-house plants; they will also stimulate animal life. Both require water—the vegetable externally, the animal internally as drink. Caloric will melt fats at 140° , and in hot air baths liquify the subaceous matter of the skin, facilitate its removal, and prevent fat deposits of heart, liver, and kidneys. Caloric, at 240° in the dry rooms of the washhouses, dries clothing quickly, disinfects them, and kills vermin and their eggs, which boiling water cannot; at 160° it will coagulate animal tissues, kill animal poisons and contagions of every kind, and stop fermentation. A few weeks since, a hot-air bath, at from 180° to 230° , cured a burn on a child, and a scald on an adult, in a few hours; which sustains the old idea mentioned in some surgical works—namely, to apply the burned part close to the fire.

In the *Cork Examiner*, I saw lately a letter stating that some medical men there require the midwives to take hot-air baths to destroy puerperal poisons. Many a mother may be spared to her family by this precaution. In Dr. Watson's lectures on the

practice of physic, he mentioned that the plague does not spread when the temperature is below 60° nor above 90°, and that typhus fever, measles, and scarlatina are very rare in intertropical climates. Dr. Henry proposes to destroy certain contagions by artificial heat. Dr. Mason Good, in his great work on Medicine, stated, "the common cause of fever is promoted by a low degree of warmth and moisture—between 60° and 90°: that typhus is far more general in temperatures too low than too high, since cold and moisture depress the living power." The hot air bath would meet this state of things. Dr. M'Cormack, of Belfast, attributes all forms of tubercular disease, consumption, scrofula, &c., to a vice of respiration; as breathing hot air depurates depraved blood, it ought to remove this vice of respiration. Dr. Carpenter stated in his prize essay—"That perspiration has no weakening effect in itself, except by the diminution of the water in the blood, which may be re-supplied from the stomach, appears from the fact, that if persons exposed to high heat make no bodily exertion, they experience no loss of vigour if copiously supplied with cold water; such exposure may conduce very much to invigorate the system." "The fatigue from muscular exertion at high heat is generally set down to excessive perspiration, although it is chiefly to be attributed to the interference with the vaporous, or the insensible transpiration, which is caused by the excess of fluid sensible perspiration on the surface of the skin; for the same fatigue is experienced when the atmosphere is loaded with moisture, even at a low temperature; or from wearing waterproof garments, which not only keep out the rain but keep in the insensible perspiration." "The cooling influence of perspiration is checked, and the heat of the body injuriously augmented. An accumulation of excrementitious matters takes place in the blood, such as will account for the muscular fatigue when exertion is called for in a heated atmosphere charged with moisture, but is less in a dry atmosphere of a very high temperature, such as that of glass houses or foundries, than in the less heated tropical climates which contain more moisture. It is not the loss of liquid from the skin which causes exhaustion from muscular exertion in a heated

atmosphere, but the elevation of the animal temperature of the body itself, so easily produced by a moist heated atmosphere, which obstructs the elimination of excrementitious matters from the blood through the lungs and skin." The foregoing remarks, from so distinguished a medical authority, seem decisive in favour of the superior merits of the hot-air bath. Fever is a pestilential poison of the blood, manifested by high heat and muscular prostration, while copious perspiration is the cool or crisis for throwing off this morbid matter, after which the body regains its health and strength. Cold water to drink and hot air to breathe seem well calculated to aid Nature in all her vital functions, to remove a variety of diseases, and to restore the normal equilibrium of health. Water is a chemical compound of oxygen and hydrogen, that undergoes electro-chemical decomposition in the stomach; air is a mechanical mixture of oxygen and nitrogen, that requires no such decomposition; air charged with much moisture is not so suited for respiration.

When Dr. Corrigan condemns hot air baths he appears in opposition to the experience of centuries in Rome, and of many modern medical authorities. There can be no higher medical authority in Ireland than Dr. Corrigan, but we are all required to exercise our reason upon medical doctrines before we adopt them. For man is man only through that light of reason implanted within him, which he should never sacrifice. For, he who cannot reason is a fool; he who will not is a bigot; he who dare not is a coward: but he who can, dare, and will reason, is a man of strong mind and noble soul—fearless, firm, and free. It is due to Dr. Corrigan to state that he considers the Turkish baths, as used in the East, with more vapour, "will become most useful medical adjuvants," So far, he seems rather a friend than a foe to the system; but the Orientals have latterly acknowledged the improvements on their baths, introduced by the bath medical authorities in this United Kingdom. Dr. John Armstrong, of London, lecturing on congestive fever, stated "That the fatigue from a hot water bath is frequently fatal; the hot air bath does not fatigue, it will bring pounds of blood to

the surface which were suffocating some internal organ; it will balance the circulation sooner than any other means I know." "The patient is raised, as by the touch of a magic wand, from weakness to strength." Sir B. Brodie remarks—"The hot air baths are of great use in dyspeptic and gouty habits, and in those who lead inactive lives." Baron Alderson, to his son:—"I had Sir B. Brodie to see me, for sciatica; by his order, I have been stewed alive in a bath of 140 degrees—not unpleasant after all. Some people can bear 400 degrees without inconvenience." Mr. Atkinson gives a Siberian cure for influenza he underwent:—"I was boiled alive, then skinned with a birch rod, till I presented the appearance of a raw beefsteak, and was finally sluiced with icy-cold water." Sir A. Burnes, in his *Travels in Bokhara*, states:—"With regard to the shampooing process, you are rubbed, scrubbed, buffeted and kicked, but it is all very refreshing." I might quote many more medical authorities, but I shall confine myself to a few sentences from the report of the Newcastle Infirmary, where the Roman baths were introduced by Sir John Fife, the consulting surgeon. "My anticipations as to the success of the Turkish bath in the treatment of disease have been fully realised. The temperature ranges from 130° to 160°, according to the nature of the disease, state of the circulation, and condition of the patient submitted." "The extreme heat exerts less influence on the heart and circulation than the ordinary warm bath." "In some cases of heart disease patients have undergone the process with unlooked-for benefit." "In dropsy, from liver and kidney disease, the profuse perspirations afforded more relief than could have been attained by medicine in the same time." "In rheumatism and skin diseases it is invaluable." Sir John Fife further states, "The ordinary hot bath either induces, or prevents relief from, palpitation of the heart, and predisposes to cold." "The Turkish bath leaves the patient less susceptible of cold, for the pores are contracted by the cold douche." "Internal congestions, chronic and scrofulous inflammations, are relieved, and an equality of circulation brought about by this bath." "I have been restored to youth by being roasted alive in this bath of the

Romans," says Sir John Fife. In the foregoing quotations from Dr. Armstrong and Sir John Fife, the statements of Dr. Madden, that the hot air bath is injurious where there is congestion of heart, brain, lungs, or liver, are completely refuted. These baths are more required in Winter than even in Summer, and everyone who values long life and good health will take one, once-a-week, all the year round, as the most healthful luxury of life, the best preventative of disease, and physical strengthener of the animal frame, and of all the vital functions. Let us recollect that small-pock, a skin disease, decimated the Red American Indian; and if it were not for one great mind, Dr. Jenner, Europe might now be a comparative wilderness—the Saxon and the Celtic races cut off by the same scourge, which seems to have come into Europe, as the thermæ of the ancient Romans went out of general use. Curious, small-pock, scarlatina, and cholera, which now form the triple scourge of mankind, were unknown to the ancient Greeks and Romans, as if they were inflicted as a punishment for our singular neglect of the physical virtue of personal purification of the skin in latter ages. The skin, the safety valve for all the inner vital organs—their sewerage requires to be regularly used. It was the only organ consigned specially to man's own care, and placed within his observation, and, notwithstanding, it is the one most neglected. In England, with a population of twenty-eight millions, the births in a year are three hundred and sixty-five thousand. In France the population is thirty-six millions; births, forty-five thousand in a year. Why, then, does not the population of England surpass that of France? Half those born in English cities are cut off before five years. I am inclined to offer the following causes:—In England there are more drugs used; we rely more upon medical Art; the French more upon medical Nature. We have more clouds and less sun, more vapour and less caloric; we require the substitute of hot air baths, which supply caloric from without, and stimulate the vital organs from within, to regenerate and to retain electricity upon the body. We should correct that error in medical science, expressed by a Scottish

doctor to Sir A. Cooper: "Sir Astley, dear, there are two things we should bear in mind—the love of God, and bowels open." Pores open would be more in accordance with the divine precept, the physical virtue—"In the sweat of thy face thou shalt eat bread." I perceive by a Sydney paper that the bath is lately established there, and that a leaden skeleton, ramified with a backbone and rib pipes, open in front to receive a patient, is constructed so as that hot and cold water douche baths can play alternately, or together, all over the head and body. This reminds me of Dr. Marshall Hall's ready method to resuscitate the drowning patient—to dash the body alternately with hot and cold water, to develop animal electricity, and through it animal life, and thus aid Nature to lift him into life again who was all but submerged in the ocean of eternity. The velocity of those birds which fly into the higher and colder regions of the atmosphere, and down again into the comparatively warmer one, proceeds from their highly electrical condition, sustained in those ozoniferous regions above, and by the sudden changes of temperature. The thermo-electric hot air Roman baths seem better calculated than any other form of bath to regenerate and retain vital electricity within and upon the human frame. It is the natural, internal, universal, and active bath: all others are either external, passive, partial, or artificial in their nature and effects. It is to be preferred even to the modern Turkish bath of heated humid air, for it would be insufferable; if its moisture were highly heated it might scald the pulmonary membrane. I find the following words in the note of a medical book published in London 104 years ago, by Dr. James Grieve—"In the Roman baths there were five apartments:—The Tepidarium, rendered tepid by dry vapour from a fire; persons remained here to purify their humours, and not to go unprepared into the hotter rooms." "The Laconicum, or Callidarium, was in all things similar, only that the heat was greater." Mercurialis says—"Some imagined that the Frigidarium contained water, but there is no mention of water in authors. It was contrived for those who came from the Calidarium to enjoy a cool air." When the population of ancient Rome was

five millions, there was no hospital in the city. It is even said that for five hundred years there was no physician there. Baths and gymnasia were their medical or sanitary institutions. It is said that there were 870 baths under the Emperors, which were masterpieces of art. The Romans introduced them into England, where their remains are to be seen. In the reign of Augustus they had reached their highest splendour. The ladies had their baths paved with silver. It was a source of pride, and a pleasure to the Romans that their baths were tempered by the hand of a Cato, or one of the Cornelii—for the office of the most noble Edile was to inspect the bath, require cleanliness, and a salutary temperature. "The Stoic held the Roman bath to be essential to virtue, the Epicurean to vice, and the patriot to happiness." To the corrupt Roman it furnished an innocent gratification, and to the austere Saracen a seductive observance. The most polished prized it as the chief profit of art, the most savage as the chief luxury of nature. The Roman Emperors bathed with the people, and, like the Turks, gave it a religious character; the baths were closed when any misfortune happened to the State. Caligula prohibited, under pain of death, to indulge in such a luxury on a religious holiday. Those who sought popularity among the Roman people gave them a day's bathing free of expense. What a more healthful luxury this was than whiskey is in this age of Christianity! Augustus furnished baths and barbers to the people for a whole year, free of expense: Agrippa built baths and bequeathed them to the people, and an estate to support them. Such princely patriotism on the part of Pagans may well challenge the rich, pious Christians of this age to imitate their noble examples. They seemed to love their neighbours practically, and thus, were more like Christians than Christians themselves. Pliny said to Trajan—"The dignity of the city, and the splendour of your reign, require the bath." The baths of Dioclesian accommodated 3,000 persons at a time; 40,000 Christian slaves were employed in their construction. St. John, the beloved apostle, took the bath at Ephesus and lived a century. St. John Chrysostom, who was banished from Constantinople in the fifth

century, lamented the loss of his bath in these words: "I am a mere cinder, consumed in the fiercest furnace of fever, without baths or physicians." The farther we go into antiquity the more magnificent were the public baths. Alexander the Great was astonished at the magnificence of the baths of Persia. In ancient and modern Egypt baths were practised; when Alexandria was taken, in 640, it contained 4,000 baths, and the great library was burned to heat them. The modern Egyptians are fond of baths, and take them once a week—the days for them are festivals among the ladies, who attend them in full dress. The baths in China are crowded with visitors. Disraeli said: "The East is the land of the bath: Moses and Mahomet made cleanliness Religion."

The baths of ancient Rome united every sort of recreation; they contained quarters for the military who guarded them, for the slaves who attended them—shaded walks, a spacious stadium for foot races, courts for athletic exercises, saloons for indolent leisure, schools for social conversation, halls for literary assemblies, libraries for study, galleries for painting and statuary, theatres for dramatic performance, halls for the recitations of poets and the public lectures of philosophers. An ancient writer, Mercurialis, supposes that the custom among the Romans of taking only one set meal in the day, arose from their spending so much time in going through the several processes of the bath—that hardly time was left for even a meal. Before I conclude, I deem it due to present a picture of our own sad social, sanitary, and physical condition—for we should have some knowledge of our vital transactions, of the alphabet of life, and learn how to prolong it. Only one in a thousand reaches seventy years, although a hundred years is the full term of natural life. I believe we are all more or less cut off twenty years before the natural time to which we might live, if we only observed the laws of Nature, and the precept of personal purification as strictly as the ancients did. We work the bowels, which are the negative pole of our electro-chemical battery, and neglect the skin, the positive pole, although it is a more important eliminator of morbid matters from the blood. The lungs

and skin hold first rank as life-guards—they remove nine-tenths of the solids of the system, and come next to the kidneys in the quantity of the fluids. The bowels have the least important duty to perform. People are generally complimented upon their plethoric, portly, *i.e.*, their pork-like appearance; but Dr. Armstrong said such constitutions should be looked after—for the germs of disease, of one form or another, are then implanted within them, and they may be suddenly cut off by some heart or head attack, or linger longer on liver or lung disease, &c. Gout demands its victims from the lords of the land. It is eloquently defined in these words—“A disease that attacks aldermen and beneficed clergymen—bishops are its martyrs, while curates are exempt from it. It is the *morbus dominorum*, the *dominus morborum*—the disease of aldermen, and the alderman of diseases.” Dr. Armstrong said, if people would pay the same attention to their own skins that they do to those of their horses, they would promote long life and good health. The groom attends more closely, in the care of the horse, to the philosophy of living, than the nurse or the doctor to the care of a pet child—for the latter is generally dragged up into life, and drugged out of it in many cases. I have full faith in drugs as aids to Nature, but let no man usurp her authority. The late scientific Surgeon Carmichael, of Dublin, stated—“That to no class are the medical profession more indebted for patronage and support than to those ladies who eat two dinners daily, sit tightly laced in their earriages, and forget to use their legs except in a ball room.” He suggested to them “to reform their habits, or if not, take physic, and the medical world will thrive accordingly;” but I would say, frequent the temples of health, take the thermo-electrical bath, and their health will thrive accordingly. Many a fashionable lady—who forms but the least part of herself, for the decorations of art form the greater part of many of them—who will not exercise sufficiently, becomes the victim of light literature or needle work, who fancy she thrives on medicine, whereas medicine thrives on her; and many a moustached man, or mirror of fashion, might reasonably ask: Are we really cleaner than our humble

working neighbours? We fear our perishable palaces of soul are fair without but foul within, while their's look foul without, but are really cleaner and healthier within. They are strong and healthy, we are weak and delicate—the victims of diseases or of drugs. They are really clean, we only look so. They practice the physical virtue of personal purification by perspiration—we do not; nor do we undergo the thoroughly purifying process of the hot air natural bath. The skin is supplementary to the lungs, and to all the inner vital organs. It is our only life-guard for all the out-works of human nature. It is furnished with a sewerage of over 25 miles in extent in its millions of pores. It was consigned to our own care, to keep in healthy natural action. Perspiration ranks next to food, exercise, and sleep, as a vital necessary, and increases the relish for these three. Many a life suddenly cut off might be prolonged by attention to the Divine precept—"In the sweat of thy face shalt thou eat bread;" then "wash and be clean." I trust the day is not distant when the sign of a lady and of a gentleman will be that they take the weekly thermo-electrical bath of Nature, and that statues may perpetuate the memories of the Sovereign, the Prince, the Peer, the physician or the patriot, to whom we shall be most indebted for recalling these ancient Roman Temples of Health from the tombs, of oblivion, and consigning them to the cradles of the rising generation as the most important institutions for promoting public health and personal reform. This bath is social as well as sanitary: it destroys the cravings for strong drinks. It is a Temple of Temperance. The illustrious Baeon lamented the loss of these baths to European nations. Would that our glorious Queen Victoria would institute a fourth class of this ancient order of the Bath, to be conferred upon those who would patronise, support, and frequent these Temples of Health. What higher honour could a lady or gentleman desire than to be permitted to wear the crimson ribbon of this Order, with its motto—"tria juncto in uno," as the badge of Temperance, Purity, and Pleasure.

POSTSCRIPT.

I DEEM it due to the readers of the foregoing lecture "on the connection between animal life, vital electricity, and Roman baths," to offer a few further observations which may serve to illustrate more fully the views and first principles of medical science I have attempted to unfold. It is not to be understood, because muscular power moves the bones according to the mechanical laws of lever action, or the muscular power of the heart propels the blood according to the rules of hydraulics, that vital actions can be fully explained on physical principles.

Vital action, in both the animal and vegetable kingdoms, is a special force, as distinct from the chemical and the mechanical forces as they are from each other. It is that primal power of life through which the living body is built up, or rather builds up itself, from the first vital germ, maintains its own typical form, and procreates its own kind during life, all which ceases in death.

This *vital principle* is the directive agency—the superintendent as it were, that sees the design of the Almighty Architect accomplished by workmen who labour under its direction to construct each fabric, be it animal or vegetable—that live, grow, and regenerate others *sui generis*. The vital agents that work under this vital *principal* are three—caloric, light, and electricity; the two former seem to proceed from the latter. The materials with which they build up each living fabric are three: air, earth, and water, which may also be reduced to one—matter. In my lecture I have endeavoured to show that electricity—an imponderable form of matter—is the universal agent of nature, the foreman of all vital works, acting under the vital *principal* in each particular case. As magnetism requires to be combined with motion to develop electricity, so does the vital germ or principal require the co-operation of caloric to call forth this latent life, and to promote the growth and nutrition of organic life. We cannot have latent caloric rendered sensible

without some form of electro-chemical combustion or change, so that if caloric calls out latent life in summer heat, electricity may be said to call out latent caloric.

Now that we can perceive the vitalizing influence of external heat on cold-blooded hibernating animals, and on plants, in calling out their latent lives in full bloom under the summer heat. We can clearly comprehend its benign influence upon all Nature, and that of the thermo-electrical bath upon man in calling out his vitality from the centre to the circumference of the human frame, and thus relieve internal congestions. That caloric has this special power seems demonstrated by experiments on animals killed by intense heat—hot air—in which the blood was found dispersed all over the body, instead of being collected about the heart, as is usual in other *post mortem* appearances. The seed that lies latent in Egyptian mummies preserves its own life for centuries, waiting the favorable opportunity for the influence of the vital agents caloric, light, and electricity to assimilate to its special nature elements from the three materials, air, earth, and water, and thus enable it to grow and produce a crop. Hot air to breathe, and cold water to drink, seem singularly calculated to combine those vital agents and those material elements that renovate and refresh all living nature. If we water the soil, and the roots of the plant—and apply heat to its leaves, the lungs of the plant, we promote exuberant vegetation.

If we treat man and animals to cold water, as drink, and to hot air to breathe, they will thrive accordingly; for, the stomach is furnished with the radicals of animal life, which become as refreshed with cold water as the radicals of plants while they are under the influence of high heat.

The scientific sentiments of the Very Rev. Dean Keating, of Killfenora, are so well expressed, in a printed paper that he was kindly pleased to send me a few days since, on the power and effects of electricity, “a subject which has long engaged the Dean’s attention,” that I am induced to quote a few words. He stated: “The exuberant vegetation which springs up during night is attributable to surcharges of electricity, evolved, and largely

imbibed by the thirsty plants, from impregnated dew-drops, owing to the rapid alteration of temperature after the scorching sun beams of day." "The human body is affected on like principles, by passing from hot to cool air in Turkish or Roman baths, and the medicinal properties of these valuable institutions are derived from this source." "Electricity is the chief agent on the occasion, modified according to the circumstances of the case, and varied in quantity by the difference of requirements."

Sir James Clarke stated in his *Treatise on Pulmonary Consumption*, that one-third of the mortality of England arises from tubercular diseases. Scrofula and consumption are one form of tubercular disease in all essentials—the result of depraved blood, caused by a vice of respiration, so scientifically shown by Dr. M'Cormac, of Belfast, who believes that "one hundred thousand persons are at this moment perishing of phthisis in these three kingdoms, and as many more preparing to replace them." Whole armies are being decimated prematurely by a preventible disease, dragged up into life and drugged out of it, or consigned to the indiscriminate use of cod liver oil, which is capital food for Laplanders, but generally gross, luscious, and disordering to the delicate stomachs of more refined Englishers or Irishers, &c.

The true way to administer that remedy is by inunction through the skin; but the skin should be first prepared—purified by a hot air bath to receive it. We would not force food upon an overloaded stomach, neither should we force oil into the pores of the skin until they be disembogued of their impurities. The old Romans acted scientifically; they first purified themselves with a hot air bath, underwent ablutinal purification, anointed their bodies with perfumed oils, and were then prepared to dine. The rich are equally as subject as the poor to consumption, because they are as exposed to the vices of respiration, and the neglect of perspiration. If they would only recollect that instant death from suffocation would occur if the whole body were varnished, or gilded over imperviously, they would understand that the skin is a vital organ which should not suffer from a vice of respiration, that

prolific source of tubercular disease in man and animals. The wild animals confined in menageries, and the domestic animals which are neglected in the amount of pure air, active exercise, and natural perspiration—purification of skin—all become more or less the victims of tubercular disease.

Now, Muscular exercise excites the electro-chemical union of the oxygen of pure air with the carbonaceous matters of the body, to consume them. For those who cannot have a sufficiency of air and exercise, the hot air bath supplies a substitute—to purify the blood by perspiration. The strengthening effects of these thermo-electrical baths are being so clearly established by the pugilists and pedestrians who frequent them now in England, that we expect shortly to learn that they will be had recourse to in military training and discipline, to promote the psycho-physical health and the athletic energy of soldiers, and thus fortify them for the fatigues of war. Whatever system of training would most promote these objects must become the most formidable element in the profession of arms—in the art of war. A most important life-guard will the physician be to a nation who can establish these vital facts. No one should suffer to be disfigured with blotched face, or any form of eruption of the skin, if they would only take the hot air Roman Bath, which is thermo-electrical in its nature and effects.

It is absurd to send consumptive patients to hot climates when they can have higher temperatures at home, at less expense to their physical strength and pecuniary circumstances. When under the beneficial influence of a hot air bath of a temperature to suit each particular case, they can have in two hours more impurities of blood removed from the system, through the skin, than could be removed in a two months residence in a warm climate. The beneficial influence of these thermo-electrical Baths must surpass that of the high dry mountain or marine native atmosphere so much lauded for delicate consumptive patients, for they are vastly better calculated to regenerate and retain animal electricity within and upon the human frame. Through their salutary influence

each of us may become a pure personal reflector of public health—a living legitimate glass of animal spirits, of health, and of fashion.

It is truly a noble profession which qualifies a man to teach his fellowmen the science, the alphabet of life—how to extinguish maladies by physical education, how to promote long life in good health. If it were a source of satisfaction to me to know that my psycho-legal appeal in 1856, “alone had any weight with His Excellency” to spare the life of one man from a public execution, it is a source of still greater gratification to co-operate with greater minds in the diffusion of vital information, calculated to prolong the lives of millions of mankind, or to protect them—so far as strict observance of the laws of nature is permitted to do—from sudden and premature deaths. What can be more saddening and frightful than the perusal in the public papers of those verdicts after sudden head or heart attacks, “died by the visitation of God,” or from “natural causes,” although the whole life of the deceased was a living contradiction to the Divine precept—the physical virtue of personal purification—his habits were more or less suicidal and self-poisoning, to the special neglect of the de-poisoning processes which alone secure the normal equilibrium of health. The *horse* is well cared; but man—the lord of creation, is neglected by himself. Every one possessed of a spark of humanity, of ability and means, should promote these “Temples of Health and Temperance,” for their own sake as well as for that of their fellow men. For, these are the most powerful and general eliminators of morbid matters from the blood, and have the salutary influence of a universal blister all over the body, by drawing peccant humors to the surface, and thus relieve internal congestions, act as the safety valve to the heart, and flush out the whole cuticular sewerage from within.

There are some really good and amiable people who can command all the comforts of life, who are ignorant of the laws of life, of the very alphabet of their own existence—who fancy that their family drug-doctor understands their constitution; accordingly, they become drugged and re-drugged. Many a living specimen of

refined porcelain—the victims of light literature and needle-work, walking wax-works—are sacrificed at the shrine of household purgatives, &c., &c.

These people know no better; it is hopeless to reason with them—the ignorance of such drug victims, and the interests of the drug doctor are arrayed against you. The dignity of human nature—of the whole man, is never thought of; the stomach alone, that “centre of sympathies,” is to be stormed and subdued. You consult its index, the tongue—that never told a lie—and prescribe accordingly. Schiller truly said, in 1780: “A physician whose horizon is bounded by an historical knowledge of the human machine, and who can only distinguish the coarser wheels of this piece of intellectual clock-work, may, perhaps, be idolised by the mob, but he will never raise the medical art above the narrow sphere of a mere bread-earning craft.” Mind and matter must be considered in common to comprehend the whole man. The earthly tabernacle of our immortal spirits require personal purification, in order that our mental faculties and physical functions be well conducted—“mens sana in sano corpore,” by this means we may hope to reduce poor law and lunatic asylums’ medical expenditure. It is due to the dignity of human nature to introduce man to himself—to his sublime essence, Being—that divine diamond-gem that sparkles in his soul with living light, and through which alone he is man and the lord of creation, in order that he may know what he is to honor with personal purification.

Man, then, is an immortal spirit, endowed with light from eternity, and endowing flesh with life *pro tempore*. The living photographic image and likeness of the Almighty Creator is stamped upon the soul of the creature, conferring upon it immortality, and the light of reason—that grand primal idea of Being, which comprehends all other ideas—is the germ of intelligence that expands in the growth of the brain, and under the influence of education, branches off into all the sciences to form the flourishing tree of human knowledge that diffuses light over all his senses and their operations; enables man to embrace in an instant

the past, the present, and the future: to triumph over time and distance, and by the marvellous power of invention, to develop new wonders every day. Surely the living temple of this divine light deserves to be kept clean, to be purified. Man, the living likeness of his Almighty Maker, the epitome of the universe, the beauty of this world, the living testimony of two worlds—of one within the other, the noblest study of mankind; man should “keep his house in order,” even though it occupied two hours once or twice a week.

THE ROMAN BATHS IN BRITAIN.

WE observed in the *Illustrated London News*, of the 17th instant, a sketch of the bath rooms of a Roman villa in Wiltshire, which is being excavated under the direction of Mr. Poulett Scrope, M.P. A nest of rooms, corresponding with the Roman thermæ or hot-baths, has been discovered. There is the *hypocaust*, or furnace; the *laconicum*, or inner sweating room; the *calidarium*, another hot room; the *loutron*, or stone bath room proper; the *tepidarium*, a cooler room; and the *frigidarium*, or cooling room.

There is the perfect remains of another Roman bath to be seen in Chester. Its *hypocaust*, *sudatorium*, and *præfurnium*, hot-air, or dry vapour, not the humid air of the modern Turkish baths, was the element used in the ancient Roman baths.

CATTLE DISTEMPERS.

As the physician is the philosopher of nature, properly so called, it is his special province to observe and to study her laws in every region of knowledge, and in every kingdom of nature, for the good of mankind. The formidable cattle distempers come, therefore, within the field of medical science and observation, for good beef is the most important staff of life. Physically it is the best bulwark

of a people. If it be not the sinews of war it surely supplies the muscles of war. Dr. Barter, who was the first medical man in Ireland to embark thousands of pounds in the establishment of these reformed Roman or Turkish Baths, for which he deserves public gratitude, wrote to me, a few days ago, the following lines on the results of their use in the treatment of animals:—"The bath has been applied by me, and by several farmers in my vicinity, to the lower order of animals with satisfactory results, and particularly in the lung disease of horned cattle with great success." What is the true nature of this cattle distemper? It appears to me to be a pestilential poison of the blood which produces that lung complication called Pleuro-pneumonia, *i.e.*, inflammation of the lungs and pleura. The blood poison seems to be the proximate cause—the original *essential* disease; the lung complication the proximate *effect*, or the *accidental* disease—even though invariably present.

Nature, which is the physician of all diseases, sends the poisoned blood to the lungs in larger quantity and in more aerid quality, in order that it be depoisoned, purified there; but so far from being purified its aerid quality and increased quantity produces congestion and inflammation of the lungs and pleura. Precisely as in cholera, the vomiting and diarrhœa mask and obscure the blood poison. So, in like manner, the Pleuro-pneumonia masks and obscures the blood poison of cattle distemper. If we be influenced by empirical principles, we will neglect the original blood poison, and treat the local lung disease by bleeding, calomel, tartar emetic, nitre, arsenic, and by the various specific nostrums trumpeted, none of which have stood the test of time and trials. The rational scientific treatment should be to aid nature to eliminate the poison, the whole poison, and nothing but the poison. If we bleed, we draw the good blood required, to nourish the body, as well as the bad blood; which we should try to eliminate; we sink the animal, rob him of his life-blood, just as we would in typhus fever—a blood poison. We should rather bring about a diversion by action on the skin from counter-irritation; or still better, by hot air baths,

which are so singularly calculated to bring blood to the surface of the skin, as Dr. Armstrong said, in pounds, and thus relieve internal congestions and inflammations. It, as I have said, would act like a universal blister all over the body without the pain. Cold water to drink and hot air to breathe will eliminate blood poisons by perspiration, produce a crisis as in fever, while hot air of high temperature is said to kill animal poisons. It would be well also to clean down, groom the animal, and dash him with cold and hot water alternately, so as to excite his animal electricity. By this means we treat the blood poison and the lung complication, whereas by the empirical practice we treat or rather attempt to treat only the one.

I must here quote a few words from the editorial leader of *The Field*, of 28th April:—"Everyone who has had to do with the bringing either man or horse into perfect condition, knows that the critical part of the process is to apportion the sweats so that the fat and soft substance may be removed, and yet the stamina of the patient may not be unduly taxed or over-fatigued by the means adopted to produce the perspiration. This result has at last been obtained by the re-introduction to this country of the method which was in practice amongst the *athletæ* of Greece and Rome, and which, eighteen hundred years ago, was perfectly familiar to the inhabitants of Britain, as the remains of Roman baths clearly demonstrate. The leading points may be stated as follows:—

- "1st—That, by the application of hot, dry air, the man or horse is sweated without the incumbrance of heavy extra clothing.
- "2nd—That he is thus sweated while at rest, and that therefore the danger attending an over-action of the heart is avoided.
- "3rd—That he is sweated whilst naked, and that therefore, by the admission of air to the pores, he is cleansing the system from within, and also engaged in purifying the blood from without.

"Very recently, Messrs. Prince, of the Racket Club, in Hans Place, have opened a bath, realizing the Roman process of a gymnasium in conjunction with the bath."

"The pugilists and pedestrians of the North of England avail themselves of this unfatiguing yet effective mode of training." "The bath at Sheffield is scarcely ever without some of those gentlemen." A medical gentleman in the South of Ireland constructed a loose box for horses, heated on the same principle, in which unsound horses are cured by this sweating system." A gentleman at Brackley, in Northamptonshire, adopted the same system with his hunters, and he informed us that nothing could exceed either the enjoyment of the animals, or the rapid improvement of condition and wind, obtained without the necessity of pounding the legs under heavy "sweaters."





